

# Research on Current Situation and Countermeasures of High-tech Exports in Shandong Province

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**Abstract:** Export volume of high-tech products is an important index to measure the economic competitiveness of a region. As a major economic and foreign trade province, Shandong Province actively promotes support for high-tech industries and exports of high-tech products. However, there are still some problems restricting the sustainable development of Shandong high-tech products export. Based on the analysis of the status quo of high-tech exports in Shandong Province, this paper summarizes the problems existing in the export of high-tech products in Shandong Province and puts forward corresponding countermeasures and suggestions in order to boost the export competitiveness of high-tech products in Shandong Province.

## 1. The Current Status of High-tech Exports in Shandong Province

### 1.1 Export volume

With the help of China's high-tech industrial policy, Shandong's high-tech industry has developed rapidly since 2001, forming five pillar industries: electronic information industry, new material industry, advanced manufacturing industry of biomedical industry and marine engineering.

With the rapid development of Shandong's high-tech industry, the export of Shandong's high-tech products has increased year by year. As can be seen from Table 1, the export volume of Shandong's high-tech products increased substantially from 2012 to 2015, with the highest annual increase of more than 20%. However, there was a sudden decline in 2015. Since then, the export volume has been shrinking year after year. The proportion of high-tech products in Shandong's gross exports is gradually decreasing over the same period. As can be seen from Table 2, in 2016 the total export volume of high-tech products in Shandong Province was surpassed by that of Zhejiang Province, and since then the gap has gradually widened. In 2017, Shandong Province ranked 11th in the country and far behind Jiangsu Province in terms of high-tech exports, which is out of line with the status of a major foreign trade province.

Table 1 Shandong high-tech export from 2012 to 2017

	Export volume [billion dollar]	Growth rate of Export volume[%]	Proportion of high-tech export in gross exports[%]
2012	14.71	-4.9	11.2
2013	17.53	19.2	12.8
2014	20.54	17.2	14.2
2015	17.71	-13.8	12.3
2016	14.78	-16.5	10.8
2017	14.62	-1.08	9.9

Table 2 Horizontal Comparison of High-tech Products Exports in Three Coastal Provinces from 2012 to 2017[billion dollar]

high-tech exports	2012	2013	2014	2015	2016	2017
Shandong Province	14.71	17.53	20.54	17.71	14.82	14.62
Zhejiang Province	14.88	14.37	15.44	16.79	16.85	18.66
Jiangsu Province	132.91	128.88	129.36	131.09	116.98	138.01

## **1.2 Trade modes of high-tech exports in Shandong Province**

Processing trade has always been playing a dominant role in the export of high-tech products in Shandong Province. Due to the relatively late start of high-tech industry, the weak ability of independent innovation and the low added value of the products, the processing trade mode mainly consisting of processing with imported materials and client's materials still accounts for a large proportion of high-tech exports.

## **1.3 Types of high-tech export enterprises in Shandong Province**

Foreign-funded enterprises have always been the main exporters of high-tech products. In recent years, the proportion of foreign-funded enterprises has begun to decline slightly, while the proportion of state-owned enterprises and private enterprise has increased slowly. In the long run, private enterprises which are developing faster than state-owned enterprises may become a strong force to promote the export of high-tech products in Shandong Province.

## **2. Problems Existing in the Export of High-tech Products in Shandong Province**

### **2.1 Irrational industrial structure and decentralized distribution**

Under the background of economic globalization and scientific and technological integration, Shandong Province actively encourages the development of high-tech industries, expands capital investment, and strives to make high-tech industries a new trade growth point of Shandong Province. However, in the process of development, many regions blindly copy the experience of the surrounding areas, ignoring the local conditions, industrial environment and resource advantages, mechanically follow the general situation and rush to establish industrial clusters. This will not only fail to stimulate the local economy, but also lead to a series of serious problems, such as waste of resources, contradiction of industrial structure, and destruction of regional economic balance.

### **2.2 Overdependence on foreign-funded enterprises**

Overdependence on foreign-funded enterprises means that most of export profits will flow abroad. At present, foreign-funded enterprises have always occupied a dominant position, while the export proportion of local private enterprises and state-owned enterprises is relatively low. This is mainly because most of the private enterprises in Shandong Province are small and micro enterprises, which are small in scale, short of funds and low in productivity, and can not meet the needs of customers while state-owned enterprises are imperfect in modernization system and their organizational structure can not adapt to the competition of market economy, and there are still some deficiencies in their international trade and sales.

### **2.3 Processing Trade dominating Export**

Processing trade with low technology content and low added value makes it impossible for us to master the core technology of high-tech products. The lack of core technology makes Chinese enterprises only at the low end of the industrial chain. At present, Shandong enterprises generally undertake the task of processing and assembling imported raw materials or semi-finished products. This situation of "two ends out" is not only difficult to promote the development of high-tech industries in Shandong Province, but also make domestic industries vulnerable to global economic instability, which increases the export risk of Shandong enterprises.

### **2.4 Insufficient government support and R&D investment**

In the context of economic globalization and scientific and technological integration, although the government has taken a number of relevant measures on promoting trade through science and technology to promote industrial investment and to provide a favorable situation and environment for development of high-tech industries, the policy support effect of the government is not strong.

In terms of government investment, compared with other coastal areas, Shandong Province's government investment is relatively small and far behind the development of local economy. In

terms of finance, the relevant system is not sound enough and the support is insufficient to meet the needs of enterprise development. Shandong's R&D investment is still at a relatively low level compared with other coastal provinces, and high-tech industries have great potential to develop.

### **2.5 Lack of independent innovation ability**

Although the number of patent applications in Shandong Province is on the rise, the number of patents in high-tech areas is less than the national average, and many enterprises are still in the state of manufacturing without creating, even living by imitation.

Shandong enterprises are relatively backward in R&D, short of independent intellectual property rights, unable to independently develop new products to meet the needs of the market and customers. At the same time, there are also some acts of sale of counterfeit goods and infringing intellectual property rights in many areas, which seriously hinders the improvement of independent innovation ability.

## **3. Countermeasures for Improving the Export Competitiveness of High-tech Products in Shandong Province**

If Shandong Province wants to make great progress in high-tech industry and continuously expand its foreign trade export volume, it is necessary to continuously grasp the main aspects of the main contradictions and solve a series of problems that restrict the export development through corresponding measures.

### **3.1 Rationally plan the industrial layout and optimize industrial structure**

In order to improve the situation of overdependence on foreign-funded enterprises, emphasis should be laid on promoting the progress of private enterprises to further expand the export of high-tech products. Although private enterprises have shown a good momentum of development and made certain progress in recent years, its development space still needs to be further improved. Therefore, the Shandong provincial government should provide a healthy and sustainable development environment for private enterprises, expand financial support, make them have a certain backup guarantee, and constantly improve the single structure of export enterprises.

### **3.2 Promote the Development of Private Enterprises**

At present, foreign-funded enterprises have been playing a leading role in the export of high-tech products, far more than private enterprises and state-owned enterprises. Although in recent years, the government has vigorously supported private enterprises, and their development speed has shown a good momentum, its development space still needs to be further improved. In order to improve the predicament of single structure of export enterprises and further expand the new pattern of export products by promoting the progress of private enterprises, the Shandong government should provide a healthy and sustainable environment for private enterprises, expand financial support, make them have a certain backup guarantee, and constantly improve the passive situation of single structure of export enterprises.

### **3.3 Transform the Mode of Export Trade**

At present, Shandong Province's high-tech products have been mainly exported through processing trade, which makes Shandong enterprises at the bottom of the international industrial chain and brings little economic and social benefits. To change this situation, provincial governments need to constantly promote the upgrading and transformation of processing trade.

Shandong enterprises need to strengthen their independent R&D capabilities, enhance the scientific and technological content of products, promote the improvement of service level and technical quality of products, and continuously enhance the proportion of high-end products in exports.

### **3.4 Expand Government Support and Increase Scientific Research Investment**

Firstly, we should establish and improve relevant professional systems, implement export-friendly policies, including preferential fiscal and taxation policies, market access policies, policies to encourage scientific and technological innovation, and increase capital investment, so that more and more private enterprises have the opportunity to participate in the development of high and new technology. Secondly, we should increase investment in scientific research, raise the proportion of basic research investment in R&D investment, and enhance the competitiveness of enterprises acting as the main body of independent innovation. Finally, we should establish and improve the early warning and relief mechanism, strengthen the supervision and guarantee of the export of products in the province through various ways, and advocate that trade associations play a guiding role in promoting the coordinated development of the market so that enterprises can timely adjust their development strategies and cope with market challenges.

### **3.5 Enhance the ability of independent innovation and strengthen the protection of intellectual property rights**

To expand the export of high-tech products, we must strengthen the ability of independent innovation. First of all, we should learn from the advanced experience of developed countries or coastal areas, actively participate in international exchanges and cooperation of cutting-edge science and technology, strengthen the awareness of independent innovation of enterprises, and create a strong atmosphere of independent innovation. Secondly, we should expand the intensity of attracting investment, actively promote cooperation between foreign-funded enterprises and provincial scientific research institutions, and encourage joint research and development; Thirdly, we should encourage the development and protection of independent intellectual property rights, strengthen the construction of independent intellectual property rights system, and set up information consultation and collection service organizations specially high-tech enterprises to reduce market risks.

## **4. Conclusion**

Shandong Province lacks well-known brands with significant influence in the international market, and many enterprises have weak brand awareness and are at a disadvantage in international market competition. Therefore, Shandong Province should change its thinking and strengthen the awareness of brand and crisis. First of all, we should pay attention to the brand cultivation of high-tech enterprises, create brand image, enhance brand awareness. Secondly, we should make full use of international and domestic platforms to expand influence, expand brand publicity, enhance brand recognition and enhance the international competitiveness of famous brands. Finally, we should learn to use legal means to strengthen brand protection, constantly improve and improve brand protection laws and regulations, and strictly rectify the market order.

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